



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8

999 18TH STREET - SUITE 500
DENVER, CO 80202-2466

EPR:ER

FINAL POLLUTION REPORT VASQUEZ BLVD. & I-70 (Removal #2) City and County of Denver, Colorado

I. HEADING

Date: **10/09/01**
Site Name: Vasquez Blvd. & I-70 (**Removal #2**)
(aka North Denver Residential)
From: Pete Stevenson, OSC
To: Patty Smith, EPA Headquarters
POLREP No.: **POLREP #4 and Final**

II. BACKGROUND

Site No.: 9R
Response Authority: CERCLA
Action Memorandum: September 16, 1998
Amendment - RV#2: 04/18/00
Start Date - RV#1: October 13, 1998
Completion Date - RV#1: October 1, 1999
Start Date - RV#2: September 27, 2000
Completion Date - RV#2: October 9, 2001

III. SITE INFORMATION

A. Incident Category

Time-Critical, Fund-Lead, Removal Action

B. Site Description

1. Site Location

The Site is located in the northwest part of Denver and generally is bounded by the South Platte River on the West, Colorado Boulevard on the East, 35th Avenue on the South, and 52nd Avenue on the North.

2. Site Characteristics

The Site area was settled in 1851, four years after the first pioneers entered the valley. Approximately 5700 people currently live in Elyria and Swansea, the predominant neighborhoods in the Site area. Youth under 18 comprise 36% of the residents (twice the average of the City of Denver).

Soon after development of the area, it was presumably contaminated by wastes containing lead and arsenic from smelting operations in the area. At least three smelters operated in the area in the late 1800s. These smelters reportedly deposited wastes within or adjacent to the Site.



3. Description of Threat

Arsenic and, to a lesser degree, lead have been identified at the Site as the contaminants of concern. Arsenic and lead are hazardous substances, as defined by Section 101 (14) of CERCLA. These hazardous substances may have been released into the residential soils by historic smelting activities and spread through the Community by aerial deposition. At least 21 properties contain arsenic and lead at levels of concern to the Removal Program.

Because arsenic contamination is found in unsodded areas that are used for recreation, there is also a potential for contaminated soil to be wind-blown and dust-sized particles to be transported by wind and human activities into additional yards and into homes. There are an estimated 6000 cubic yards of soil contaminated above the selected Removal Program health protective action level of 2000 ppm lead and/or 450 ppm arsenic.

IV. RESPONSE INFORMATION

A. Situation

1. Action description

The following represents factors considered in determining whether properties within the community would be included within EPA's time critical removal action. These criteria were developed with input from EPA toxicologists, technical staff, and CDPHE/Denver personnel. They were based on the need to provide immediate reduction in exposure to arsenic/lead contaminated soil. These factors were generally considered on a zone-by-zone basis to establish whether an individual zone should be addressed to safeguard the overall residential yard for a young child. Both current and potential future exposures were considered in applying the criteria.

Initially, 21 properties were identified as candidates for this Removal Action and eighteen were selected for remediation. In August of 1999, EPA implemented a Phase III Field Investigation within the study area of the Site. Phase III, part of the ongoing Site remedial investigation, included sampling of surface soil, garden vegetables, and garden soils in residential yards and dust within the homes. It also included surface sampling of schools and parks. A total of 1550 residential properties, four schools and one park were sampled during the period August through November, 1999. The targeted properties were all those that had never been sampled in previous removal site assessments conducted in 1998 (the Phase I and Phase II sampling programs). The results of the Phase III investigation indicated that 33 residential properties were in need of removal action. **The additional properties are similar to those in the Original Action Memorandum and removal procedures were similar; however, in order to accomplish the new removal activities the Action Memo was amended to include a Second Removal. All owners were contacted, but three refused access for EPA to conduct the Removal Actions. Therefore, 30 residential properties were cleaned up in the the Second Removal.**

The Removal Action at the 30 additional homes included the following specific activities:

- a. **Contaminated soils were removed to a one foot depth.**
- b. **Individual properties where soil is removed was backfilled with clean soil and top soil to the original grade and landscaped with sod.**

c. Structures and fencing on the properties were left in place or returned to their original locations. If fencing could not be reused, it was replaced.

d. Existing shrubs and/or bushes (defined as low, densely branched plants that impede soil removal) were removed and replaced with the same species, standard nursery stock, and number of plants.

e. Existing perennial plants were removed and replaced with the same (to the extent possible) or similar species, approximate size, and number of plants.

f. Annual plants were removed with no replacement.

g. If the existing system impeded soil removal or would not function after barrier soil was placed, it was removed and replaced with the same or similar system.

h. Existing concrete, asphalt, brick stone, or tile surfacing (sidewalks, driveways, parking, lots, pads) remained in place and were excavated around unless the existing surfacing had been damaged in the past to the extent that soils exceeding the action levels are exposed. If soils exceeding the action levels had been exposed, they were removed and replaced with equivalent materials to prevent exposure.

i. Existing landscape covers and borders were removed and replaced with equivalent materials in areas requiring remediation. The original materials were used if materials were not damaged during removal.

j. Outdoor animals were temporarily relocated during remediation of individual properties.

k. Movable buildings and sheds were temporarily relocated if remediation was necessary under such structure.

l. Existing vegetable gardens, exceeding action levels, had a maximum of 18 inches of soil removed, which was replaced with a minimum of, but not necessarily more than, 18 inches of suitable vegetable garden soil with characteristics acceptable to EPA (clayey or sandy loam soils having a specified minimum percentage of organic matter). Suitable grades and ground cover was restored.

m. Dust suppression measures were utilized during Removal. If necessary, other measures, such as sealing of doors and windows with plastic, was taken during remediation of individual properties. If necessary, portable air cooling devices were offered to residents during this time period.

n. Existing decks remained in place and excavation took place beneath and around as needed unless the existing deck impeded soil removal.

Owners of the additional 30 residences were asked for permission to remediate their property. Detailed plans were developed for the properties which are undergoing remediation, and owners were provided copies and an opportunity to discuss the plans. The removal schedule were provided to the owner; and after the removal, replacement of sod, etc., each owner reviewed the action with the OSC to discuss any future activities.

2. Project Schedule

Soil removal activities for Removal Action #2 were started on 09/27/00. Excavation/removal activities were completed prior to the end of the year; however, monitoring of landscape restoration and minor cleanup activities continue into the Summer of 2001.

3. Planned Removal Actions

At this time, EPA's involvement in this Removal Action has been completed consistent with the National Contingency Plan.

4. Key Issues

There are no key issues identified at this time.

V. COST INFORMATION

Total costs for this Removal Action are not available at this time, but they are not anticipated to exceed the Projected Budget which is shown below.

Cost estimates for Removal Actions #1 & #2 are shown below:

	Original Ceiling (Removal #1)	Final Ceiling (W/Removal#2)
<u>EXTRAMURAL COSTS:</u>		
<u>Regional Allowance Costs</u>		
ERRS	\$ 830,000	\$2,000,000
20% Extramural Costs Contingency	\$ 180,000	\$ 400,000
<u>Other Extramural Costs Not Funded From Regional Allowance:</u>		
<hr/> START	\$ 70,000	\$ 156,000
TOTAL EXTRAMURAL COSTS	\$1,080,000	\$2,556,000
<u>INTRAMURAL COSTS:</u>		
Intramural Direct Costs	\$ 12,000	\$ 31,000
Intramural Indirect Costs	\$ 25,000	\$ 62,000
TOTAL INTRAMURAL COSTS	\$ 37,000	\$ 93,000
TOTAL REMOVAL PROJECT CEILING	\$1,117,000	\$2,649,000